

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYWIEWVRQAPGQGLEWMGEI  
LPGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYYGS  
DYVKFDYWGQGTLVTVSS

FIG. 1A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTWYQQKPGKAPKLLIYSTSY  
RYSGVPSRFSSGSGSGTDFTLTISSLQPEDFATYYCQHFYSYPLTFGGGTKVEIK

FIG. 1B

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYWIEWVRQAPGQGLEWMGE  
WLPSGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYY  
GSDYVKFDYWGQGTLVTVSS

FIG. 2A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTWYQQKPGKAPKLLIYSTSY  
RYSGVPSRFSSGSGSGTDFTLTISSLQPEDFATYYCQHFYSYPLTFGGGTKVEIK

FIG. 2B

QVQLVQSGAEVKKPGASVKVSCKASGYTFTYYWIEWVRQAPGQGLEWMGEWL  
PGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYYGSD  
HVKFDYWGQGTLVTVSS

FIG. 3A

DIQMTQSPSSLSASVGDRVTITCLASQHVGHVTVWYQQKPGKAPKLLIYGTSY  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQHFYDYPLTFGGGTKVEIK

FIG. 3B

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYWIEWVRQAPGQGLEWMGE  
WLPPGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYY  
GSDHVKFDYWGQGTLVTVSS

FIG. 4A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTVWYQQKPGKAPKLLIYGTSY  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQHFYEYPLTFGGGTKVEIK

FIG. 4B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI  
LPGSGTTNYNEKFKGRVTITADESTSTAYMELSSLRSED~~TAVYYCARADYYGS~~  
DYVKFDYWGQGTLVTVSS

FIG. 5A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTHVTWYQQKPGKAPKLLIYSTSY  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGKVEIK

FIG. 5B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI  
LPGSGTTNPNEKFKGRVTITADESTSTAYMELSSLRSED~~TAVYYCARADYYGS~~  
DYVKFDYWGQGTLVTVSS

FIG. 6A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTHVTWYQQKPGKAPKLLIYSTSY  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGKVEIK

FIG. 6B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI  
LPGSGTTNYNEKFKGRVTITADESTSTAYMELSSLRSED~~TAVYYCARADYYGS~~  
DYVKFDYWGQGTLVTVSS

FIG. 7A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHV~~VTWYQQKPGKAPKLLIYGTSY~~  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGKVEIK

FIG. 7B

QVQLVQSGAEVKKPGSSVKVSCKASGGTF~~SY~~YWIEWVRQAPGQGLEWMGEI  
LPGSGTTNPNEKFKGRVTITADESTSTAYMELSSLRSED~~TAVYYCARADYYGS~~  
DYVKFDYWGQGTLVTVSS

FIG. 8A

DIQMTQSPSSLSASVGDRVTITCKASQHVITHV~~VTWYQQKPGKAPKLLIYGTS~~  
YSYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGKVEIK

FIG. 8B

7F3com-2H2 V<sub>H</sub>

1	CAGGTGCAG	CTGGTGCAG	TCTGGGGCT	GAGGTGAAG	AAGCCTGGG
46	TCCTCAGTG	AAGGTTTCC	TGCAAGGCA	TCTGGAGGC	ACCTTCAGC
91	<u>TATTACTGG</u>	<u>ATAGAGTGG</u>	GTGCGACAG	GCCCCTGGA	CAAGGGCTT
136	GAGTGGATG	GGAGAGATT	TTACCTGGA	AGTGGTACT	ACTAACCCG
181	<u>AATGAGAAG</u>	<u>TTCAAGGGC</u>	AGAGTCACC	ATTACCGCG	GACGAATCC
226	ACGAGCACA	GCCTACATG	GAGCTGAGC	AGCCTGAGA	TCTGAGGAC
271	ACGGCCGTG	TATTACTGT	GCGAGAGCG	GATTACTAC	GGTAGTGAT
316	<u>TACGTCAAG</u>	<u>TTTGACTAC</u>	TGGGGCCAA	GGAACCCTG	GTCACCGTC
361	TCCTCA				

FIG. 9A

7F3com-2H2 V<sub>L</sub>

1	GACATCCAG	ATGACCCAG	TCTCCATCC	TCCCTGTCT	GCATCTGTA
46	GGAGACAGA	GTCACCATC	ACTTGCAAG	GCAAGTCAG	CATGTGATT
91	<u>ACTCATGTA</u>	<u>ACCTGGTAT</u>	CAGCAGAAA	CCAGGGAAA	GCCCCTAAG
136	CTCCTGATC	TATGGGACA	TCCTACAGC	TACAGTGGG	GTCCCATCA
181	AGGTTCACT	GGCAGTGGA	TATGGGACA	GATTTCACT	CTCACCATC
226	AGCAGTCTG	CAACCTGAA	GATTTTGCA	ACTTATTAC	TGTCAGCAA
271	<u>TTTTACGAG</u>	<u>TATCCTCTC</u>	ACGTTTCGGC	GGAGGGACC	AAGGTGGAG
316	ATCAAA				

FIG. 9B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI  
LPGSGTTNPNEKFKGRVTITADESTSTAYMELSSLRSEDTAVYYCARADYYGS  
DYVKFDYWGGQGLTVSS

FIG. 10A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTHVTWYQQKPGKAPKLLIYGTSY  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGTKVEIK

FIG. 10B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSYYWIEWVRQAPGQGLEWMGEI  
LPGSGTTNPNEKFKGRVTITADESTSTAYMELSSLRSEDTAVYYCARADYYGS  
DYVKFDYWGGQGLTVSS

FIG. 11A

DIQMTQSPSSLSASVGDRVTITCKASQHVITHVTWYQQKPGKAPKLLIYGTSY  
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGTKVEIK

FIG. 11B

## Accession No. NM\_000590

```
1   ccgctgtcaa gatgcttctg gccatgggtcc ttacctctgc cctgctcctg tgctccgtgg
61  caggccaggg gtgtccaacc ttggcgggga tcctggacat caacttcctc atcaacaaga
121 tgcaggaaga tccagcttcc aagtgccact gcagtgctaa tgtgaccagt tgtctctggt
181 tgggcattcc ctctgacaac tgcaccagac catgcttcag tgagagactg tctcagatga
241 ccaataccac catgcaaaca agatacccac tgattttcag tcgggtgaaa aaatcagttg
301 aagtactaaa gaacaacaag tgtccatatt tttcctgtga acagccatgc aaccaaacca
361 cggcaggcaa cgcgctgaca tttctgaaga gtcttctgga aattttccag aaagaaaaga
421 tgagagggat gagaggcaag atatgaagat gaaatattat ttatcctatt tattaattt
481 aaaaagcttt ctctttaagt tgctacaatt taaaaatcaa gtaagctact ctaaatacgt
541 atcagttgtg attatttggt taacattgta tgtctttatt ttgaaataaa t
```

FIG. 12

**Accession No. A60480**

1 mllamvltsa lllcsvagqg cptlagildi nflinkmqed paskchcsan vtscclclgip  
61 sdnctrpcfs erlsqmntntt mqtryplifs rvkksvevlk nnkcpyfsce qpcnqttagn  
121 altflkslle ifqkekrmrgm rgki

**Accession No. NP\_000584**

1 maellasags acswdfprap psfpppaasr gglggtrsfr phrgaesprp grdrdgvrp  
61 massrcpapr gcrclpgasl awlgtvllll adwvllrtal prifsllvpt alpllrwav  
121 glsrwavlwl gacgvratv gsksenagaq gwlaalkpla aalglalppl alfreliw  
181 apgsadstrl lhwgshptaf vvsyaaalpa aalwhklgs1 wvpggqggsg npvrrllgcl  
241 gsetrrls1f lvlvvlssl gemaipfftgr ltdwilqdg adtftrntl msiltiasav  
301 lefvgdgiyn ntmghvhshl qgevfgavl r qeteffqqnq tgnimsrvte dtstlsdsls  
361 enls1flwyl vrglcllgim lwgsvs1tmv tl1tlpl1fl lpkkvgkwyq l1evqvresl  
421 akssqvaiea lsamptvrsf aneegeaqkf reklqeikt1 nqkeavayav nswttsisgm  
481 llkvgil1yig gq1vtsgavs sgn1vtfvly qmqftqavev llsiyprvqk avgssekife  
541 yldrtprcpp sg1ltplhle glvqfqdv1f aypnrpd1lv lqgl1tftlrp gevtalvgpn  
601 gsgkstvaal lqnlyqptgg q1l1dgkpl qyehrylhrq vaavggqepqv fgrslqenia  
661 ygl1tqkptme eitaaavksg ahsfisglp qydtdevdeag sqlsggqrqa valaralirk  
721 pcvl1l1ddat saldansqlq veq1lyespe rysrsv1lit qh1slveqad h1lfleggai  
781 reggthqqlm ekkgywamv qapadape

**Accession No. AAC17735**

1 mvltsalllc svagggcptl agildinfli nkmqedpask chcsanvtsc lclgipsdnc  
61 trpcfserls qmtnttmqtr yplifsr1vk s1evlknknc pyfsceqpcn qttagnaltf  
121 lks1le1f1qk ekrmrgmrgki



Accession No. NM\_002186

```
1 agcagctctg taatgcgctt gtggtttcag atgtggggcg cctgtgtgaa cctgtcgtgc
61 aaagctcacg tcaccaactg ctgcagttat ctccatgaatc aggctgaggg tctttgtctg
121 gcacccagag atagttgggt gacaaatcac ctccaggttg gggatgcctc agacttgtga
181 tgggactggg cagatgcatac tgggaaggct ggaccttga gagtgaggcc ctgaggcgag
241 acatgggcac ctggctcctg gcctgcatac gcatctgcac ctgtgtctgc ttgggagtct
301 ctgtcacagg ggaaggacaa gggccaaggt ctagaacctt cacctgcctc accaacaaca
361 ttctcaggat cgattgccac tggctctgcc cagagctggg acagggtcc agccctggc
421 tcctcttcac cagcaaccag gctcctggcg gcacacataa gtgcatcttg cggggcagtg
481 agtgcaccgt cgtgtgcca ctgaggcag tgctcgtgcc atctgacaat ttcaccatca
541 ctttccacca ctgcatgtct gggagggagc aggtcagcct ggtggacctg gagtacctgc
601 cccggagaca cgttaagctg gaccgcctt ctgacttgca gagcaacatc agttctggcc
661 actgcatcct gacctggagc atcagtcctg ccttgaggcc aatgaccaca cttctcagct
721 atgagctggc cttcaagaag caggaagagg cctgggagca ggcccagcac agggatcaca
781 ttgtcggggg gacctggctt atacttgaag cctttgagct ggacctggc tttatccatg
841 aggccaggct gcgtgtccag atggccacac tggaggatga tgtggtagag gaggagcggt
901 atacaggcca gtggagttag tggagccagc ctgtgtgctt ccaggctccc cagagacaag
961 gccctctgat cccacctgg ggggtggccag gcaacaccct tgttgctgtg tccatcttct
1021 tcctgctgac tggcccagc tacctcctgt tcaagctgtc gccagggtg aagagaatct
1081 tctaccagaa cgtgcctct cccagcgtat gttccagcc cctctacagt gtacacaatg
1141 ggaacttcca gacttgatg ggggcccacg gggccgggtg gctgttgagc caggactgtg
1201 ctggcaccac acagggagcc ttggagccct gcgtccagga ggccactgca ctgctcactt
1261 gtggcccagc gcgtccttgg aaatctgtgg cctggagga ggaacaggag ggccctggga
1321 ccaggctccc ggggaacctg agctcagagg atgtgctgcc agcagggtgt acggagtgga
1381 gggtaacagac gcttgcttat ctgcccagag aggactgggc cccacgtcc ctgactaggg
1441 eggctcccc agactcagag ggcagcagga gcagcagcag cagcagcagc agcaacaaca
1501 acaactactg tgccttgggc tgctatgggg gatggcaect ctcagccctc ccaggaaaca
1561 cacagagctc tgggcccata ccagccctgg cctgtggcct ttcttgtgac catcaggggc
1621 tggagaccca gcaaggagtt gcctgggtgc tggctgggtc ctgccagagg cctgggctgc
1681 atgaggacct ccagggcata ttgctccctt ctgtcctcag caaggctcgg tccaggacat
1741 tctaggtccc tgactcgcca gatgcatac gtccattttg ggaaaatgga ctgaagtttc
1801 tggagccctt gtctgagact gaacctcctg agaaggggcc cctagcagcg gtcagaggtc
1861 ctgtctggat ggaggctgga ggetcccccc tcaaccctc tgctcagtgc ctgtggggag
1921 cagcctctac cctcagcacc ctggccacaa gttcttctt ccattgtccc ttttctttat
1981 ccctgaectc tctgagaagt ggggtgtggg ctctcagctg ttctgcctc atacccttaa
2041 agggccagcc tgggcccagt ggacacaggt aaggcaccat gaccacctgg tgtgacctct
2101 ctgtgcctta ctgaggcacc tttctagaga ttaaagggg cttgatggct gttaaaaaaa
2161 aaaaaaaaaa a
```

FIG. 14A

## Accession No. NM\_176786

```

1  agcagctctg taatgcgctt gtggtttcag atgtgggagg cctgtgtgaa cctgtcgtgc
61 aaagctcacg tcaccaactg ctgcagttat ctctgaatc aggctgaggg tctttgtgt
121 gcaccagag atagtgggt gacaaatcac ctccaggtt gggatgcctc agacttgtga
181 tgggactggg cagatgcac tggaagtaa ctgctgcaag aacggacaga cactgctgca
241 gagaacttgc cagggtgtt catgctgtgg ctggtggtt caggctgcac gctccattct
301 aggaaagggg ccctcagccc agtcccttgc aggctggacc ttggagagtg aggccttag
361 gcgagacatg ggcacctggc tcctggcctg catctgcac tgcacctgtg tctgcttggg
421 agtctctgtc acaggggaag gacaagggcc aaggtctaga acctcacct gcctaccaa
481 caacattctc aggatcgatt gccactggtc tgcccagag ctgggacagg gctccagccc
541 ctggctcctc ttcaccaggc tcctggcggc acacataagt gcatttgcg gggcagttag
601 tgcaccgtcg tgctgccacc tgaggeagtg ctctgccat ctgacaattt caccatcact
661 ttccaccact gcatgtctgg gagggagcag gtcagcctgg tggaccggga gtacctgccc
721 cggagacagc agcaacatca gttctggcca ctgacactg acctggagca tcagtcctgc
781 cttggagcca atgaccacac ttctcagcta tgagctggcc ttcaagaagc aggaagaggc
841 ctgggagcag gccagacaca gggatcacat tgcgggggtg acctggctta tacttgaagc
901 ctttgagctg gacctgggt ttatccatga ggccaggctg cgtgtccaga tggccacact
961 ggaggatgat gtggtagagg aggagcgta tacaggccag tggagttagt ggagccagcc
1021 tgtgtgcttc caggctcccc agagacaagg ccctctgate ccacctggg ggtggccagg
1081 caacaccctt gttgctgtgt ccatctttct cctgctgact ggcccgacct acctcctgtt
1141 caagctgtcg cccagacttg gatggggggc cacggggccg gtgtgctgtt gagccaggac
1201 tgtgtgggca cccacaggg agccttgagg ccctgcgtcc aggaggccac tgcactgctc
1261 acttgtggcc cagcgcgctc ttggaaatct gtggccctgg aggaggaaca ggagggccct
1321 gggaccagge tcccggggaa cctgagctca gaggatgtgc tgccagcagg gtgtacggag
1381 tggagggtac agacgcttgc ctatctgcca caggaggact gggcccccac gtccctgact
1441 aggccggetc cccagactc agagggcagc aggagcagca gcagcagcag cagcagcaac
1501 aacaacaact actgtgcctt gggctgctat gggggatggc acctctcagc cctcccagga
1561 aacacacaga gctctgggccc catcccagcc ctggcctgtg gcctttcttg tgaccatcag
1621 ggcctggaga cccagcaagg agttgcctgg gtgtggctg gtcactgcca gaggcctggg
1681 ctgcatgagg acctccaggg catgttgctc ccttctgtcc tcageaaggc tcggtcctgg
1741 acattctagg tccctgactc gccagatgca tcatgtccat tttgggaaaa tggactgaag
1801 tttctggagc cctgtgtctga gactgaacct cctgagaagg ggcacctagc agcggtcaga
1861 ggtcctgtct ggatggaggc tggaggctcc cccctcaacc cctctgtctc gtgctgtgg
1921 ggagcagcct ctaccctcag catcctggcc acaagttctt ccttccattg tccctttct
1981 ttatccctga cctctctgag aagtggggtg tggctctctc gctgttctgc cctcatacc
2041 ttaaagggcc agcctgggccc eagtggacac aggtaaggca ccatgaccac ctggtgtgac
2101 ctctctgtgc cttactgagg cacccttcta gagattaaaa ggggcttgat ggctgttaaa
2161 aaaaaaaaaa aaaaa

```

FIG. 14B

## Accession No. NM\_000206

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1  gaagagcaag cgccatgttg aagccatcat taccattcac atccctctta ttcctgcagc
61  tgccccctgct gggagtgggg ctgaacacga caattctgac gcccaatggg aatgaagaca
121 ccacagctga tttcttcctg accactatgc ccactgactc cctcagtgtt tccactctgc
181 ccctcccaga gggttcagtg tttgtgttca atgtcgagta catgaattgc acttgggaaca
241 gcagctctga gccccagcct accaacctca ctctgcatta ttggtacaag aactcggata
301 atgataaagt ccagaagtgc agccactatc tattctctga agaaatcact tctggctgtc
361 agttgcaaaa aaaggagatc cacctctacc aaacatttgt tgttcagctc caggaccac
421 gggaaccag gagacaggcc acacagatgc taaaactgca gaatctgggtg atccctggg
481 ctccagagaa cctaacactt caciaactga gtgaatccca gctagaactg aactggaaca
541 acagattctt gaaccactgt ttggagcact tgggtgcagta ccggactgac tgggaccaca
601 gctgggactga acaatcagtg gattatagac ataagttctc cttgcctagt gtggatgggc
661 agaaacgcta cacgtttcgt gttcggagcc gctttaacc actctgtgga agtgctcagc
721 attggagtga atggagccac ccaatccact gggggagcaa tacttcaaaa gagaatcctt
781 tcctgtttgc attggaagcc gtggttatct ctggtggctc catgggattg attatcagcc
841 ttctctgtgt gtatttctgg ctggaacgga cgatgccccg aattcccacc ctgaagaacc
901 tagaggatct tgttactgaa taccacggga acttttcggc ctggagtgggt gtgtctaagg
961 gactggctga gagtctgcag ccagactaca gtgaacgact ctgcctcgtc agtgagattc
1021 cccaaaagg aggggccctt ggggaggggc ctggggcctc cccatgcaac cagcatagcc
1081 cctactgggc cccccatgt tacaccctaa agcctgaaac ctgaacccca atcctctgac
1141 agaagaacc cagggtcctg tagccctaag tggtactaac tttccttcat tcaaccacc
1201 tgcgtctcat actcacctca cccactgtg gctgatttgg aattttgtgc ccccatgtaa
1261 gcaccccttc atttggcatt cccacttga gaattaccct tttgccccga acatgttttt
1321 cttctccctc agtctggccc ttcttttctg caggattctt cctccctccc tcttccctc
1381 ccttcctctt tccatctacc ctccgattgt tctgaaccg atgagaaata aagtttctgt
1441 tgataatcat c

```

FIG. 14C

## Accession No.: NP\_002177

```

1 mglgrciweg wtleasealrr dmgtwllaci cictcvclgv svtgegggpr srtftcltnn
61 ilridchwsa pelgggsspwl llftsnqapg gthkcilrgs ectvvlppea vlvpsdnfti
121 tfhhcmssgre qvslvdpeyl prrhvkldpp sdlqsnissg hciltwsisp alepmttlls
181 yelafkkqee aweqaqhrdh ivgvtwlile afeldpgfih earlrvqmat leddvveeer
241 ytggwsewsq pvcfqapqrq gplippwgpw gntlvavsif llltgptyll fklsprvkri
301 fyqnvpspam ffqplysvhn gnfgtwmgah gagvllsqdc agtpggalep cvqeatalit
361 cgparpwksv aleeeqegpg trlpgnlsse dvlpagctew rvqtlaylpq edwaptsltr
421 pappdsegssr sssssssnn nnycalgcyg gwhlsalpgn tqssgpipal acglscdhqg
481 letqqgvawv laghcqrppl hedlqgmllp svlskarswt f

```

## Accession No.: NP\_789743

```

1 mhlgsncckn gqtlqlrtch gvscgwwfq aarsilgkpp saqslagwtl esealrrdmg
61 twllacicic tcvcclgsvt gegggprsrft ftcltnnilr idchwsapel gggsspwlif
121 trllaahisa scgavsapsc chlrgqschl tispslstta clggsrsaww trstcpgdts
181 nissghcilt wsispalepm ttllsyelaf kkqeeaweqa qhrdhivgt wlileafeld
241 pgfihearlr vqmatleddv veeerytgqw sewsqpyvcf apqrggplip pwwgpgntlv
301 avsifllltg ptyllfklspl rlgwpgtgpv cc

```

## Accession No.: NP\_000197

```

1 mlkpslpfts llflqlpllg vglnttiltp ngnedttadf flttmptdsl svstlplpev
61 qcfvfnveym nctwnsssep qptnltilhyw yknsdndkvq kcshylfsee itsgcqlqkk
121 eihlyqtfvv qlqdprrpr qatqmlklqn lvipwapenl tlhklsesql elnwnnrfln
181 holehlvqyr tdwdhswteq svdyrhkfsf psvdgqkryt frvrsrfrnpl cgsaqhwsew
241 shpihwgsnt skenpflfal eavvisvgsm gliisllcvy fwlermpri ptlknledlv
301 teyhgnfsaw sgvskglaes lqpdyslerlc lvseippkkg algeggpasp cnqhsipywap
361 pcytlkpet

```

FIG. 15